

Applicant : Chinnugounder Senthilkumar et al.  
Serial No. : 10/695,263  
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Attorney Docket 10559-650002 / P12972D

Please amend the claims as follows (this listing of claims replaces all prior listings):

1 - 18. (Cancelled).

19. (Currently amended) A method of generating a time signal comprising:  
generating a system time signal using a real time clock circuit that has a tunable oscillator  
for adjusting an operation frequency of the real time clock circuit, the tunable oscillator having a  
set of MOSFET capacitors that can be independently selected;

receiving a reference time signal over a network;

adjusting a set of control signals to modify a selection of a subset of the MOSFET  
capacitors in the tunable oscillator to increase or decrease the operating frequency of the real  
time clock circuit in response to a difference between the system time signal and the reference  
time signal.

20 - 27. (Cancelled).

28. (New) The method of claim 19, further comprising biasing the MOSFET  
capacitors so that the selected MOSFET capacitors each has a specified capacitance.

29. (New) The method of claim 28, further comprising generating the control signals  
by using a logic circuit, and decoupling the capacitors from the logic circuit to prevent noise in  
the logic circuit from affecting the capacitors.

30. (New) The method of claim 29, further comprising generating a filtered voltage  
signal to power a buffer circuitry that decouples the capacitors from the logic circuit.

31. (New) The method of claim 30 in which biasing the MOSFET capacitors  
comprises using the filtered voltage signal to bias the MOSFET capacitors.

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32. (New) The method of claim 19 in which the tunable oscillator comprises a resonator.

33. (New) The method of claim 32 in which modifying a selection of a subset of the MOSFET capacitors comprises using a subset of transmission gates to connect the selected MOSFET capacitors to the resonator.

34. (New) The method of claim 33, further comprising generating the control signals by using a logic circuit, and decoupling the transmission gates from the logic circuit to prevent noise in the logic circuit from affecting the selected capacitors through the transmission gates.

35. (New) An apparatus comprising:  
MOSFET capacitors, each selectable through an independent control signal generated by a logic circuit, the selected capacitors to provide an amount of capacitance that is the sum of the individual capacitances of the selected capacitors;

a real time clock to generate an oscillating signal having a frequency dependent on the amount of capacitance provided by the selected MOSFET capacitors; and

a data processor to generate a system time signal based on the oscillating signal, to receive a reference time signal, and to control the logic circuit to select a different subset of the MOSFET capacitors to increase or decrease the frequency of the oscillating signal in response to a difference between the system time signal and the reference time signal.

36. (New) The apparatus of claim 35, further comprising a low pass filter connected to a voltage supply to provide a filtered voltage signal to bias the MOSFET capacitors.

37. (New) The apparatus of claim 36 in which the MOSFET capacitors comprise P-type enhancement mode MOSFETs.

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38. (New) The apparatus of claim 36, further comprising buffer devices to decouple the MOSFET capacitors from the logic circuit to prevent noise in the logic circuit from affecting the capacitors.

39. (New) The apparatus of claim 38 in which the filtered voltage signal is used to power the buffer devices.

40. (New) The apparatus of claim 35 in which the real time clock comprises a resonator coupled to the selected MOSFET capacitors.

41. (New) The apparatus of claim 40, further comprising transmission gates, each corresponding to one of the MOSFET capacitors, to couple the selected capacitors to the resonator.

42. (New) The apparatus of claim 41, further comprising buffer devices to decouple the transmission gates from the logic circuit to prevent noise in the logic circuit from affecting the selected capacitors through the transmission gates.

43. (New) The apparatus of claim 35 in which the MOSFET capacitors comprise drain-source connected MOSFET capacitors.

44. (New) The apparatus of claim 35 in which at least one of the MOSFET capacitors has a capacitance that is less than 1 pF.

45. (New) The apparatus of claim 35 in which each capacitor comprises an N-type depletion mode MOSFET.

46. (New) The apparatus of claim 45 in which the real time clock comprises a resonator coupled to the selected capacitors.

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